

Asian Banker Research

WINCOR
NIXDORF

White Paper

Understanding the cost of handling cash in Asia Pacific

Building an integrated cash supply chain
to improve cash handling efficiency

Introduction

Customers in Asia and particularly in emerging markets remain cash focused in the making of day-to-day purchases, despite the rapid growth of electronic payments. Micropayments are a particular cash stronghold and a domain many banks would like to crack with new technologies such as contactless payment. In countries such as Vietnam, customers require big amounts of cash, whether for paying for daily essentials such as petrol, food and beverages, groceries, or even large purchases such as real estate, posing a logistical and costly challenge for retail banks. Despite considerable improvements in the past years resulting in faster circulation of cash in the cash cycle, the amount of cash in circulation is rising around the world.

Retail banks are at the forefront to ensure the flow of cash in an economy. Banks run a considerable risk, both reputational and regulatory, when their channels run out of cash. Frustrated and worried customers might decide to switch banks. The extent of this risk was demonstrated by a number of incidents in the last year, when banks were unable to provide customers with cash, not only enraging customers but also drawing the attention of regulators anxious to ensure the stability of the cash cycle. Hence retail banks find themselves between a rock and a hard place in their efforts to balance high costs with their responsibility to keep the cash cycle going smoothly.

Our research showed that banks in emerging markets today achieve the highest cost reductions in minimising labour cost, mainly through outsourcing of non-vital tasks, such as refilling and transport. On the other hand they face rising cost due to back office inefficiency and a lack of alignment in the cash supply chain. Mature market banks focus on the cost of holding excess cash mainly through improving their forecasting and planning capabilities and developing a leaner cash supply chain. We believe that the reduction of excess cash will soon be the focus of attention of emerging market banks, as increasing cost pressure due to tougher competition and contracting margins is no longer just a characteristic of mature markets anymore but increasingly drives emerging market banks today.

OUR METHODOLOGY

We spoke to ten banks from emerging markets and six banks from mature markets across Asia Pacific in our survey executed between January and March 2011. In our analysis we have classified China, India, Indonesia, Malaysia, Sri Lanka, and Thailand as emerging markets and Australia, Hong Kong, Korea, Singapore, and Taiwan as mature markets. Furthermore we conducted a survey to quantify the composition and cost of cash handling, which was fully completed by eight

banks, four from mature markets and four from emerging markets. In our interviews we focussed on interviewing heads of retail banking, but also spoke to executives overseeing the cash handling directly, such as heads of cash and payment processing. As the organisational structure of banks often differs considerably from bank to bank we also interviewed a country head for wholesale banking operations, who is in charge of cash handling in the bank.

TABLE OF CONTENTS

1. Introduction	2
2. Our methodology	2
3. Key findings / Key concerns when managing cash	3
4. Key building blocks in the development of a efficient cash supply chain management	5
5. Issues in the management of the cash cycle	6
6. Potential areas of cost savings through optimisation of the cash supply chain	9
7. Improving cash forecasting accuracy	13
8. One-on-one: An interview with Karsten Kemna from Wincor Nixdorf	14

Key findings

Managing the cost of cash handling has become an issue for retail banks across the region in the last years. This whitepaper examines the composition of cash handling cost, shows key painpoints in the cash supply chain and provides retail bankers with ideas how to manage those cost more efficiently. Our research derived the following key findings:

- Main drivers for improving efficiency in cash handling are to minimise cost and increase security
- Banks need to carefully balance cost savings and control in the development of an integrated cash supply chain
- Differing motives and roles of players in the cash supply chain and limited alignment create long and inefficient cash supply chains
- Labour cost is the main cost factor in mature markets, as

technology, outsourcing and process streamlining have significantly reduced costs such as machine downtime, excess cash, theft and insurance

- Emerging markets see the highest cost savings from minimising labour cost, particularly in outsourcing cash replenishment and maintenance, while the opportunity to cut cost through minimising excess cash is not yet seized
- Adequate forecasting is the key to minimise excess cash, but is also the most challenging task, as it is influenced by many variables
- While most responding banks are open to outsourcing the “legwork” such as maintenance, refilling and transport, they are reluctant to give core tasks out of hand, such as planning, forecasting, control and even counting and sorting

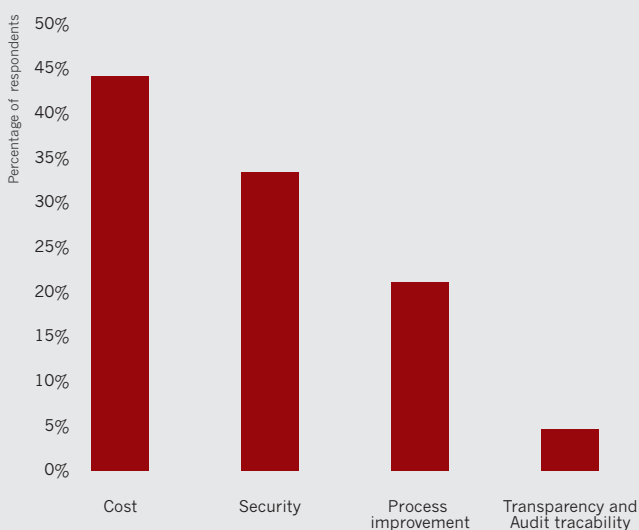
Key concerns when managing cash

When asking retail bankers for their main concerns in cash handling we saw a clear vote for cost management and security, though generally key concerns differed slightly between emerging and mature markets.

Cost is the undisputed main concern for banks in mature markets, with 55% of the participating banks citing it, while security is perceived as more important in emerging markets. This is not surprising, as cost in mature markets is usually more closely managed and labour intensive processes, such as cash handling, are a big challenge for retail banks. We will show under heading 7 “Potential areas of cost savings through optimisation of the cash supply chain” that human resources account for the majority of cost in the cash handling in mature market banks.

Banks in emerging markets regard security and cost as equally important drivers, with 36% of all respondents citing each as a key concern. Customers in emerging markets generally use more cash and are often more dependent on branches to manage their banking needs. This increasingly puts pressure on emerging banks as their operating environment gets more competitive and challenging. Security is more prominent in emerging markets due to lower public security in general resulting in higher risk of robbery, theft, and fraud. Internal theft also poses a bigger problem, as cash handling in emerg-

Figure 1 What are the key concerns for banks in the cash handling cycle?



Source: Asian Banker Research

ing markets involves more manual processing with more touch points of staff and cash thus creating opportunities for theft.

Process improvement has also moved into the priority list of retail bankers in the region. While most banks interviewed have been outsourcing the “legwork” of cash handling, such as first line maintenance and second line maintenance as well as refilling of ATMs and transportation of cash, we found the majority of the interviewed banks eager to keep the control over cash levels in the network and forecasting capabilities in-house. This means streamlining, centralisation

and automation of processes as well as improving the alignment with other parties such as outsourcing companies and cash centres.

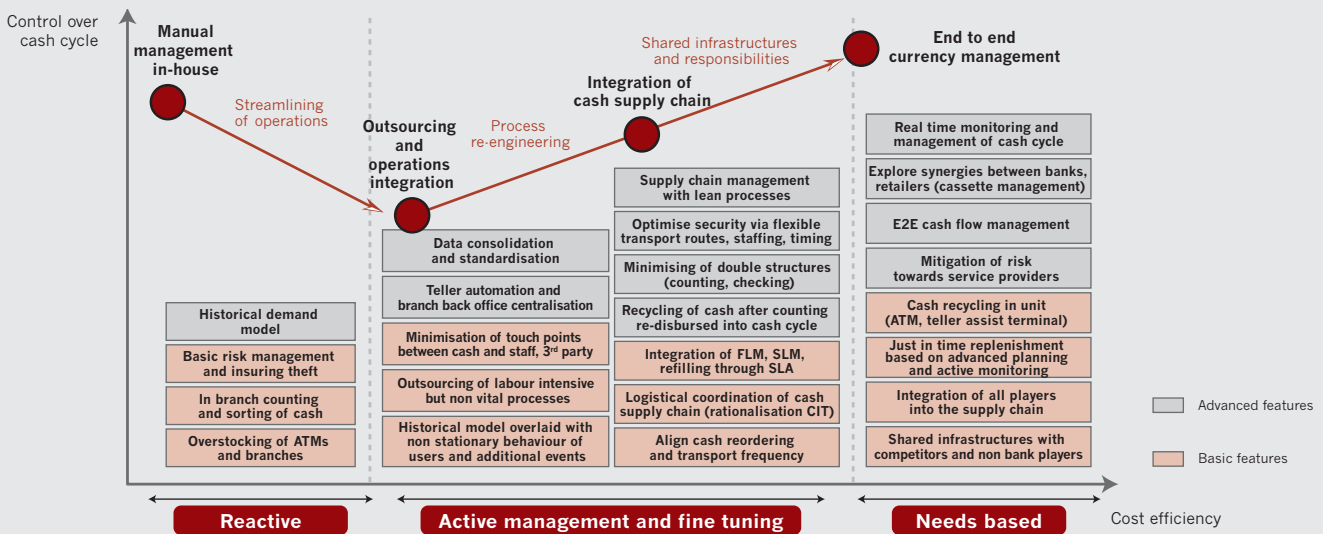
Transparency and audit traceability have also been named, but are not yet key concerns. A banker from Indonesia stated that although it is interesting for a bank to know where the cash is located at any given moment, this is more a value-added service by the CIT provider than a dire business need. However it is highly likely that this need will increase with increasing levels of outsourcing, as banks want to maintain maximum control over the cash cycle.



Key building blocks in the development of a efficient cash supply chain management

We have identified four development stages in retail banks in their journey towards an efficient cash supply chain. These stages are characterised by different levels of cost efficiency gains and control over the cash cycle.

Figure 2 Key building blocks of an integrated cash supply chain



Source: Asian Banker Research

The first stage is the traditional in-house cash handling. Cash demand is monitored and managed by means of excel tables, the network is overstocked with cash to avoid running out and branch staff is responsible for the replenishment of ATM and forecasting demand.

When banks move from the first stage to the second, we see a trade off of cost savings against control, as banks outsource more tasks of the cash cycle, while still lacking the business intelligence and analytical tools to do so effectively. In stages two, three and four, banks develop and fine-tune a number of the necessary instruments to counter inefficiencies and adjust the operating model towards shared responsibilities. This results in banks regaining control over the cash supply chain with increasing integration.

While “legwork” is usually outsourced in stage two, vital areas are often kept in-house in order to retain control. This is usually accompanied by a centralisation of processes from branches towards an operations centre to minimise work redundancies inside the bank. However the supply chain in

stage two remains inefficient as redundancies among the different players in the cycle remain.

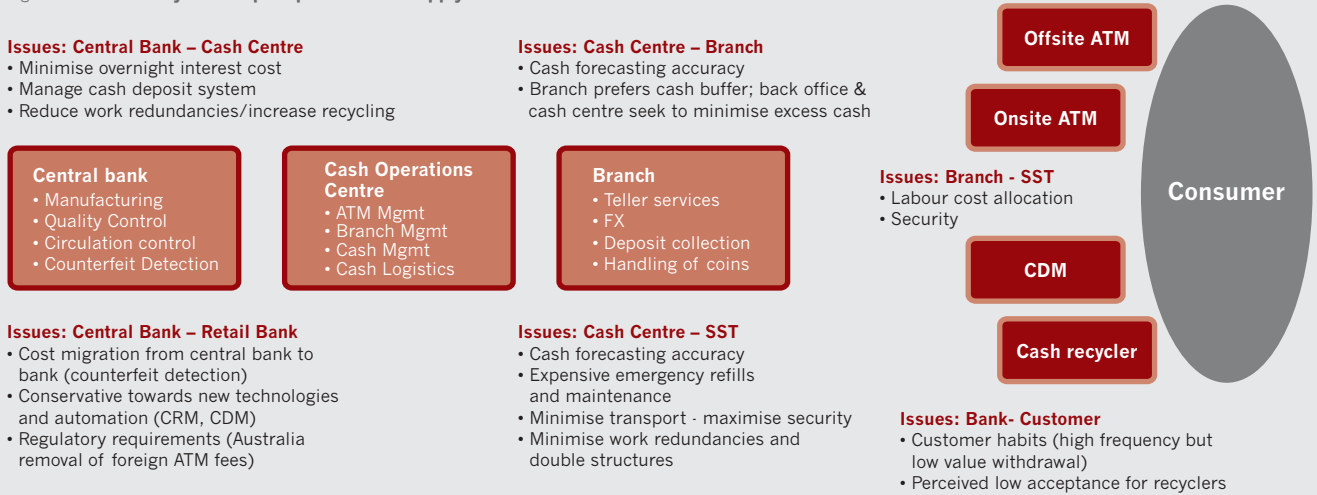
In stage three while internal process streamlining continues, banks begin the integration of workflow processes with external parties. Increasingly responsibilities are delegated to service operators, allowing a more efficient management of interaction and alignment of processes. Lean process management and Six Sigma become popular terms helping to eliminate wastage and streamline the process.

Stage four targets the “holy grail” of cash supply chain management, which we see as “just in time delivery” of cash, real time monitoring and management of the supply chain, and maxing synergies in the supply chain out. At this level the integration of players also involves bank’s corporate customers such as retailers, F&B outlets, etc. Shared infrastructure, such as recycling cash cassettes from retailers with high incoming funds into nearby ATMs open up new possibilities for further efficiency and cost improvements.

Issues in the management of the cash cycle

The cash cycle is a complicated and highly interactive process, where players with diverse incentives are forced into cooperation while being closely monitored by a regulator. Retail banks have to carefully balance cost management and cash availability in the tight framework given by the regulator.

Figure 3 The cash cycle and pain points in the supply chain



Source: Asian Banker Research

Central banks shift responsibility and cost to other players in the cash supply chain

For central banks security and integrity of the currency are key. It is the central bank’s role to monitor the resilience and efficiency of the payment system and ensure that banks and cash centres comply, even if this will result in increased cost and complicated processes on the part of the banks and cash centres.

Central banks have been delegating responsibilities and cost of the cash handling to other players in the cash cycle, such as cash centres, commercial banks and independent service providers (ISP), and even the end user. Today banks are more liable to secure the integrity of a currency, such as counterfeit identification and sorting out of unfit notes, than ever before.

Retail banks in Asia as well as regulators, such as Malaysia’s Bank Negara, are pushing for payments by non cash means to promote a cashless environment. As extensions of the government this push by regulators can be tricky, as they earn seigniorage on providing the economy with cash. Seigniorage can be seen as a *de facto* cash tax carried by the party holding the cash while it is not parked with the central bank. With

tight sovereign budgets, governments will not readily give up this source of income or see it decrease.

Cash centres can create economies of scale when banks cooperate

Cash centres can either be run by a bank, a joint venture of banks, or independent service providers. The purpose of cash centres is twofold, firstly, to provide peripheral units such as branches, retailers and self service terminals with the necessary cash, and secondly, to minimise the cost of unused cash in vaults by parking it with the central bank. More than that, cash centres are often responsible for maintaining the quality of bank notes, with regard to counterfeit identification and currency fitness. Cash centres usually seek to optimise the cash supply chain as a logistics company would do—by minimising the cost of storage while delivering goods on time. A major difference however is the security aspect in cash handling, which drives up cost through the need of armoured transport, high cost for zero error tolerance machines and close regulatory supervision. If cash centres are not well integrated in the cash cycle there are considerable double structures in banks, retailers and central banks, which slow down the flow of cash, cause high manual labour and thus drive cost.

Private cash centres can deliver value to banks by developing and managing the supply chain on lean principles, building on integrated logistics and optimising efficiency through processing economies of scale by serving more than one bank. Cash centres and outsourcing companies with the necessary volume can invest in expensive counting and sorting machines. However it is clear that there is no “one size fits all” approach and service providers will have to customise their solutions to the individual bank’s needs. Thus cash centres and the supporting cash in transit (CIT) companies need to cater for banks’ requirements, while maxing out synergies in the supply chain.

Retail banks carry the main risk for flaws in cash supply

Retail banks are the most vulnerable part of the value chain, because they carry the reputational risk as well as regulatory risk, e.g. for running out of cash, redistributing counterfeits, non-compliance, etc. As cash handling used to be a labour intensive process with manual counting and sorting, retail banks benefit considerably from higher automation and from outsourcing labour intensive work to cash centres and CIT operators.

Cash inflow, particularly cash deposits over the counter, is a key cost driver as it creates work duplication - it is processed at the counter, again in the back office to decide whether

to despatch surplus funds to the cash centre, and again in the cash centre itself. To date the cash deposit cycle has not been yet fundamentally re-engineered. Automated deposit machines, teller assist terminals, etc. have helped to bring down cost. However many banks are still hesitant to fully outsource vital tasks, such as counting, forecasting, managing cash levels to ISPs and cash centres, as they are afraid to lose control over their funds and the risk of theft. But as long as the operations are kept in-branch they remain a cost factor.

While banks traditionally developed counting and sorting capabilities in-house, there is a strong trend to outsource those tasks today, or to at least centralise the operations and move it from the branch to an in-house cash operations centre. The latter though an improvement, results in a certain level of inefficiency due to the existence of double structures and the increased risk of transport and security. Centralisation of back office operations is popular among banks in emerging markets such as Kasikornbank (Thailand) and ICICI (India).

Retail banks in Asia are now exploring new ways to manage the deposit process more efficiently, such as for example through cashless branches, where deposit collection is only executed via cash deposit machines and two way ATMs. Interesting examples include Citibank, Easy by RHB (Malaysia) and

Regulatory changes for cash handling in India

The Reserve Bank of India (RBI) currently runs cash management through an agent model and has delegated most tasks to commercial banks. “Currency chests” are managed by banks and responsible for counting, sorting, counterfeit identification and currency fitness, etc. The cash is distributed from the currency chests to branches, ATMs and other players in the cash cycle, otherwise it is stored in central bank vaults to move it off the bank’s balance sheet.

The RBI repeatedly tightened regulations regarding the identification of counterfeit notes in the last three years due to the increase of cash and counterfeits in circulation as well as the sorting of soiled notes. In November 2009, the RBI ruled that all notes above a certain denomination which are deposited in bank branches exceeding daily volume of \$1.1mn, may only be re-issued if these banknotes are duly checked for authenticity,

genuineness and fitness by machines. As a next step ATMs need to be equipped with sensors for detecting counterfeit notes.

Central banks also intervened in the ATM pricing strategy of banks. In April 2009 the RBI allowed cash withdrawal from foreign ATMs free of charge. This led to an increase in ATM transactions, especially small value cash withdrawal transactions, which impaired the viability of operations of retail banks. Following pressure from The Indian Banks’ Association, the RBI limited the scope of the regulation.

The rising cost of operating cash handling prompted retail banks to pass the cost to customers through cash-handling levies. Although officially allowed almost ten years ago, more Indian banks, spearheaded by State Bank of India, introduced cash handling levies in 2009.

POSB Express (Singapore) and Shinsei Bank (Japan) where banks do not even offer a deposit-in function over the counter, but only through self service channels.

Our interviews also showed that a number of retail bankers remain sceptical about the use of cash recycling machines which are able to sort deposited cash into separate cassettes according to currency fitness and potential counterfeits redispersing fit notes right away to the customer. While popular in Korea and Japan, regulators in other Asian markets have concerns against cash recycling. In Singapore only one foreign bank deploys cash recyclers. In China cash recycling is not officially allowed, but there are reportedly cash recyclers in operation in remote areas. Although a wide range of retail banks are investing in those machines, many have not activated the recycling function but use it as combination of ATM and CDM.

Empowering customers with a choice can incentivise preferential behaviour

In the end retail banks have to justify charges to the customer, who seeks convenience and accessibility, but is often not willing to pay for services that used to be free. Retail banks for this reason need to balance the rising cost of cash with customer behavioural patterns, and offer alternatives and incentives to help customers adapt to change. We have seen the roll out of no frills models, where customers only get basic services for free, and are charged extra for anything beyond. To this end, if customers are able to identify fees upfront, they can better select their preferred ways of banking.

Different supply chain models impact the speed and volume of cash in circulation

Basic supply chains, in which each bank deals directly with the central bank, result in long ways and require frequent secure transport. Long supply chains urge banks to hold more cash in stock in regional cash centres and branches, which increases the cost of interest, the risk of theft and the risk of delays. Such a system will slow down the velocity of the cash cycle and thus force the central bank to print more bank notes. Velocity of cash refers to the speed at which cash circulates within the economy. A cash cycle with high velocity requires less cash in circulation, as inefficiencies such as unnecessary storage can be reduced. As every bank works for itself, only larger banks will be able to stem the necessary infrastructure investments into the necessary technology and hardware. This will result in more manual intervention and duplication of processes.

In a more integrated supply chain, a joint venture of banks or an outsourcing company usually takes over the role of the cash centre. With more banks using the same cash service provider, volumes increase, efficiency can be maximised and assets such as machines, better utilised. Due to higher volumes integrated cash centres can invest in high quality machines, usually only deployed by central banks, in order to carry out the responsibilities according to central bank standards. An integrated cash centre is able to balance the cash requirements of all clients and to minimise the cash in transport and storage. This increases the velocity of the cash cycle and (therefore) reduces excess cash, holding of expensive central bank cash, and transport.

Control of customer behaviour through transparency: Removal of ATM interchange fees in Australia

The removal of interchange fees for transactions at foreign ATMs in Australia in March 2009 is a good example of how increased transparency through clear communication of fees changed customer behaviour. Prior to the change, the cardholder's bank paid an interchange fee to the ATM owner. The interchange fee and a penalty were recouped from the cardholder in the form of foreign ATM fees. The reform abolished interchange fees and forced ATM owners to charge customers directly at the time of the ATM transaction. ATMs had to display withdrawal fees to customers prior to them completing the

transaction. Knowing upfront how much a cash withdrawal at a foreign ATM costs resulted in a sharp decline of foreign ATM transactions. In the first year of the new regime, the number of foreign withdrawals fell by 18% year-on-year, while withdrawals at customers' own financial institutions' ATMs increased by 9%.

After all the change was meant to protect customers, not to facilitate cash handling in banks. For this reason the new regulation stripped banks of the opportunity to collect penalty fees from their customers and resulted in considerable lower fee income.

Potential areas of cost savings through optimisation of the cash supply chain

We conducted a survey among retail banks in 11 countries in Asia Pacific on the cost allocation of cash handling in their institutions. As the maturity level of markets in Asia Pacific is diverse, we classified those banks into two groups - emerging markets and mature markets. In emerging markets we looked at banks from China, India, Indonesia, Malaysia, Sri Lanka and Thailand. In mature markets we looked at Australia, Hong Kong, Korea, and Singapore.

The composition of cash handling cost

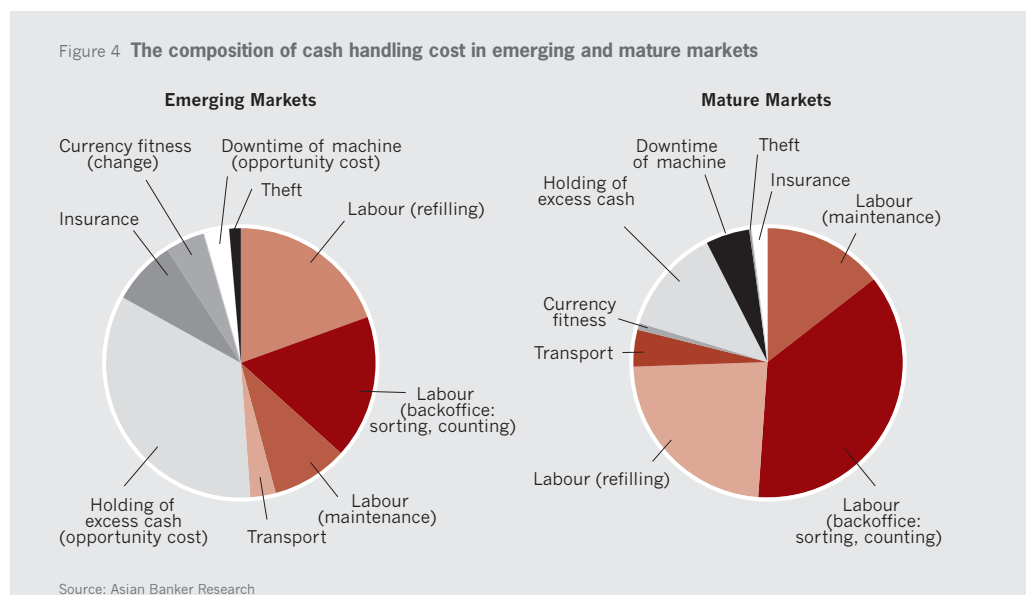
On first view our survey showed distinct differences between mature and emerging markets. Firstly, banks in mature markets spend relatively more on manual labour than banks in emerging markets. This is not just due to generally higher salaries, but also more efficient management of handling cash through technology and supply chain management, bringing down other non labour related cost. Secondly, we found that although participating banks generally spend on average between 39% (mature market banks) and 45% (emerging market banks) of their operating cost on the operation of their physical channel network, there is a big difference on how much they spend on cash handling. While emerging market banks spend 11% of their total operating cost on cash handling tasks, such as maintenance, refilling, counting and sorting, transport, opportunity cost, etc., mature market banks managed to bring down these cost to 1.4%.

Combining the two observations we conclude that technology and improved process management have helped mature market banks to reduce cash handling cost. Looking at the cost composition we see a number of differentiating external and internal factors. Among the external factors we see that lower theft and higher security result in lower insurance premiums as well as better currency fitness hold down the cash cost in mature markets. However those external factors cannot be solved by a single bank but involve the development of the overall banking system, including regulator support and public security.

“Holding of excess cash” has high cost saving potential for emerging market banks. This can be achieved by improving forecasting accuracy and implementing a leaner cash supply chain management building on the integration of players. Workflow optimisation and automation reduce storage, manual processing, work duplication and transport and thus minimise the time where cash is caught up in avoidable, non-earning processes while being on the bank’s balance sheet.

The negative effects of “machine downtime” hit mature markets more severely, as customers have higher expectations and the reputational damage for downtime is higher. More importantly system integration and technology reliance increase the exposure to system failure. Sophisticated technology is more prone to glitches.

Overall, retail banks in Asia are ambivalent about outsourcing of cash handling. While outsourcing low level tasks like transport, security and maintenance has become common in both mature markets and emerging markets, many of the responding banks are not willing to outsource vital tasks, such



POTENTIAL AREAS OF COST SAVINGS THROUGH OPTIMISATION OF THE CASH SUPPLY CHAIN

as cash forecasting, monitoring and determination of cash levels, etc.

Contradictorily we see that outsourcing goes hand in hand with relatively higher labour cost. We assume this is caused by the fact that banks that have outsourced certain tasks have a much clearer picture of their cost composition. Therefore, when branch staff replenishes ATMs and in-house teams take over basic maintenance tasks, the survey shows relatively lower labour cost compared with banks who have outsourced these tasks.

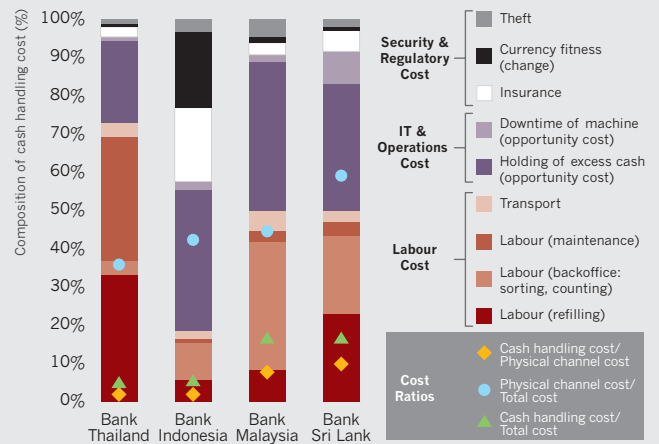
Best practice banks in emerging markets spend about 1% to 2% of their total cost on cash handling and about 4% to 6% of channel cost on cash handling. However with market maturity staff salaries and rentals increase and put them under pressure to manage labour cost more efficiently. Outsourcing allows specialisation, automation and lower unit cost due to higher volumes. Thus we believe that although some banks in emerging markets still hesitate, cost pressures and competition will force them to revisit their stance on outsourcing.

Holding excess cash is a key cost component in emerging market banks and a key differentiator to mature markets - it accounts for 33% of the cash handling cost in emerging markets compared with 6% in mature markets. Reducing excess cash is therefore vital. Some considerations include increasing the speed of the cash flow, reducing overstocking through better needs analysis and forecasting accuracy, and in-time cash replenishment of branches and ATMs according to the specific cash needs, based on real-time monitoring.

Increasing the recycling rate of cash can also help to reduce transport and storage of cash in branches and cash centres. Having cash locked up creates high opportunity cost. Managing cash recycling efficiently requires a well aligned supply chain with fast reaction times, and even more sophisticated forecasting models and monitoring systems, as more flexible variables have to be considered in the algorithm. Korean and Japanese banks lead the way in this, reflected in low cash handling cost, despite high channel cost.

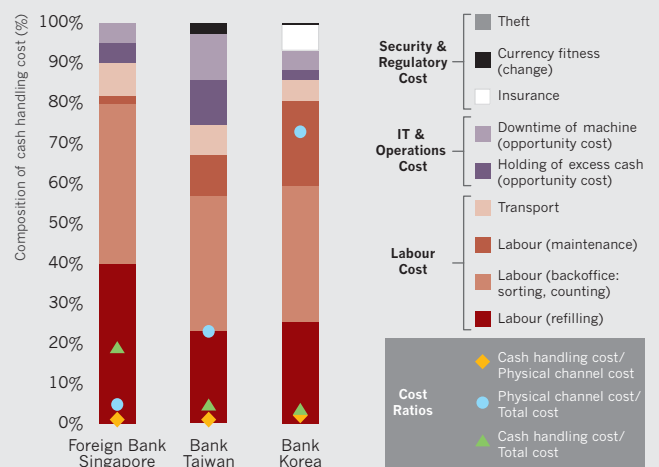
The operation of cash deposit machines is considerably more expensive than the operation of ATMs. Cash recyclers are not only pricy to acquire, but also have more downtime than a regular ATM, due to possible paper jams and other

Figure 5 The composition of cash handling cost in selected banks in emerging markets



Source: Asian Banker Research

Figure 6 The composition of cash handling cost in selected banks in mature markets



Source: Asian Banker Research

errors. On the other hand deploying cash recycling machines, both as teller assist and in the self service network creates a number of benefits for the bank, some of which are difficult to quantify. From reducing the time tellers spend on counting thus freeing them up to engage the customer, to lower cash holding in vaults and cash drawers and enhanced security, the benefits for teller assist terminals are considerable. Reduced frequency of armoured transport reduces replenishment cost in the self service network. As the machines are self sufficient, central bank cash holding can be reduced and interest payments avoided. Banks can also save on lower rental cost in self service kiosks due to these “two in one” machines.

Machine downtime holds considerable reputational risk for banks

In 2010 and 2011 we saw a number of incidents in mature markets resulting in downtime in the self service network. Although these incidents were caused by problems in the core banking system, they make clear the high risk banks run when their self service network collapses.

In March 2011 Commonwealth Bank of Australia's ATMs dispensed more cash than people had in their accounts due to a glitch triggered by a routine database maintenance forcing the bank to shut down the ATMs. The glitch not only affected ATMs, but also the bank's phone and internet banking channels. Whether or not the bank was

able to recoup the extra cash, the reputational damage is obvious.

Another example of reputational risk attributed to system downtime involved Singapore's DBS Bank in which consumer banking network went offline for seven hours in July 2010, leaving customers unable to access their accounts or complete ATM and internet banking transactions, and the bank's branches largely paralysed. Again the event was not caused by an error in the cash supply chain, but a reaction to a botched repair of the mainframe storage area network attributable to the bank's technology provider.

Changes in the composition of cash handling cost

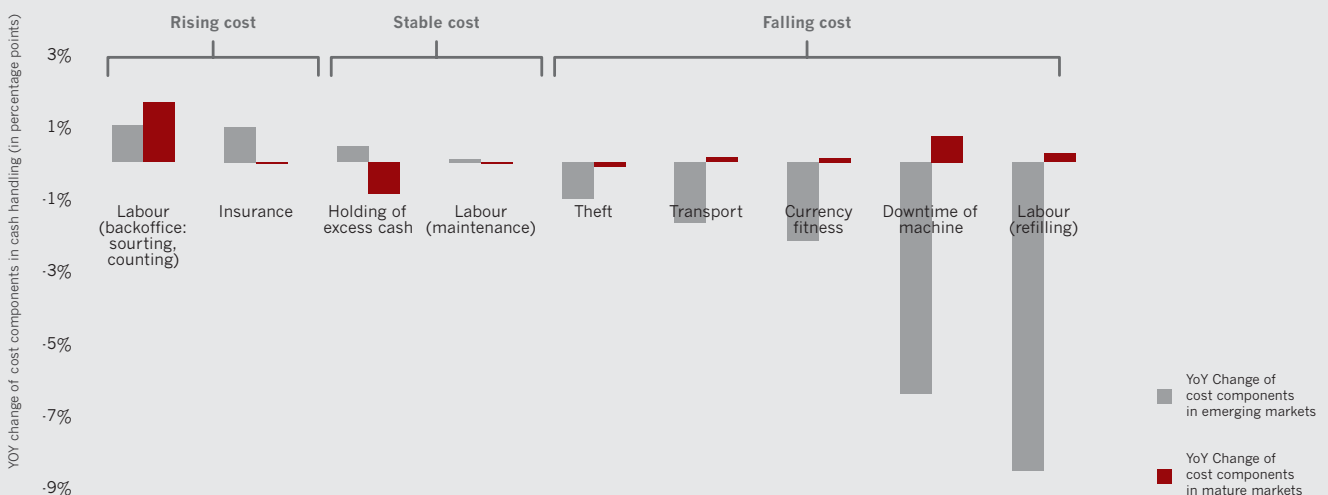
Analysing changes in the composition of cash handling cost, we see that back office labour has grown in both emerging markets and mature market banks. We believe that the increase results from rising cost of staff since 2009, but also that many banks are reluctant to outsource a number of back office tasks, which they regard as vital.

Insurance is also shown to be a cost driver in emerging markets. With rising cash amounts circulating in the economy, more ATMs

deployed in off site locations and more parties involved in the cash supply chain, insurance premiums have grown in the last year. Banker's Blanket Bonds are a popular means to cover all infidelity, theft, in transit, counterfeit, and losses regarding securities and damages to properties. As theft loss is usually covered by insurance, some banks had problems quantifying the cost involved.

Emerging market banks have achieved considerable cost savings in minimising the cost of refilling. This can be rather

Figure 7 Changes in the cost composition of cash handling from 2009 to 2010



Source: Asian Banker Research

POTENTIAL AREAS OF COST SAVINGS THROUGH OPTIMISATION OF THE CASH SUPPLY CHAIN

easily optimised by outsourcing it or centralising it to a cash operations department in the bank. However there are still a number of banks whose branch staff carry out the refilling, even for off site locations. In mature markets refilling cost has increased slightly. Banks are likely to begin to pass customers these costs, by. For example, charging for excessive low volume withdrawals.

In emerging markets we observed a considerable improvement in minimising the downtime of machines. This applies to ATM, CDM, teller assist terminals and back office counting machines. Improved quality of machines, independence of machines in terms of power shortage, higher quality of notes, particularly small denominations, and more efficient management of the cash supply and maintenance are the key reasons for this success. This also results in a reduction of costs for currency fitness.

Unit cost of the physical channel network

Looking at the operational cost of the physical channel network, it is interesting to see that operating onsite ATMs in emerging markets is not considerably cheaper than in mature markets. On the other hand the average operating cost for an offsite ATM in an emerging market bank is around \$10,000, while a mature market bank spends \$14,000. The higher cost is caused by rental and servicing cost. In general off site ATMs have higher security cost

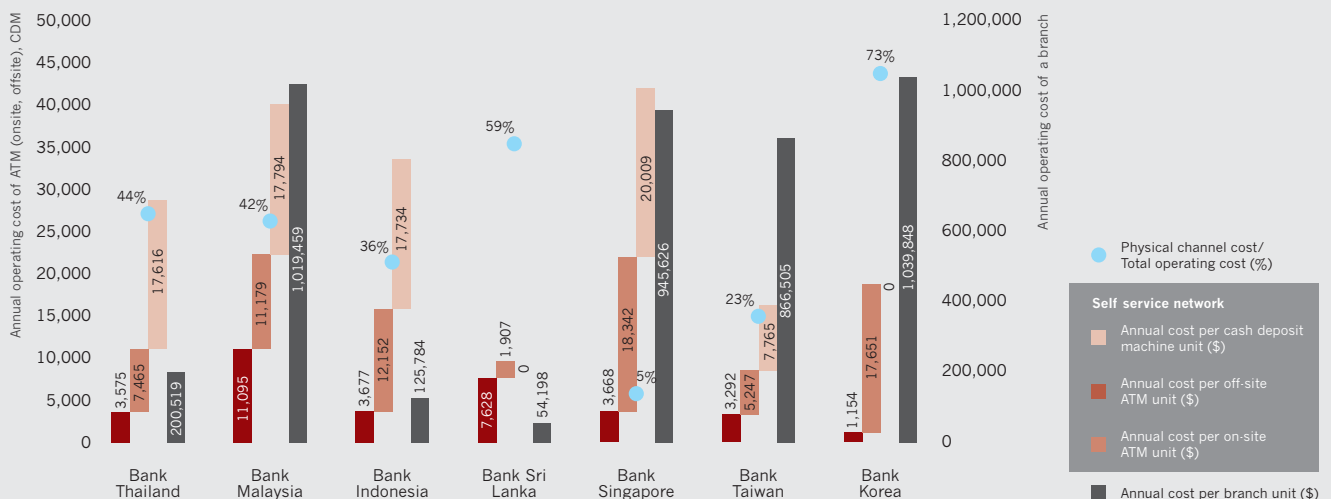
such as insurance, CCTV monitoring, etc. While onsite ATMs are often installed on bulk, offsite ATMs are usually single units.

The operation of cash deposit machines does not differ considerably between emerging and mature markets. Bank Korea has switched completely from CDMs to cash recyclers reducing operating cost of the self service network considerably. However, the high cost of rental and labour in Korea drive up the cost of the physical distribution network, which at 73% of the total operating cost, is among the highest among participating banks.

While branch operating cost in mature markets lie considerably above emerging markets, Bank Malaysia is an exception both for Malaysia and emerging markets. Although the average operating cost of a branch in Malaysia is about \$250,000, this bank due to its small network based on a one stop shop principle with relatively big branch space and manpower has cost of over \$1 million.

Due to limitations in network expansion, the cost of the physical channel network for the Singaporean foreign bank is a very low 5%, while unit cost are average for a mature market bank. The banks from partnership with other foreign banks in the country, which have connected an ATM network across the country. This gives the bank an extended footprint while keeping operating cost low.

Figure 8 The cost of the physical distribution network in selected banks



Source: Asian Banker Research

Improving cash forecasting accuracy

Cash forecasting has developed into a vital area for retail banks. Our interviews showed two approaches. One sees cash forecasting as too vital to be outsourced and wants to keep control over how much cash goes where. On the other hand there are banks that feel comfortable in outsourcing cash forecasting to a service provider, simply giving the deliverables on how much cash should be in network and in the units.

We interviewed an Indian bank which outsourced forecasting, cash ordering, replenishment and transport to different services providers, while operating regional cash centres themselves. Although the bank monitors the status of the network, any “low cash” notification from an ATM goes directly to the service provider and need not be communicated through the ATM management department of the bank. With more than 1,500 branches and over 15 regional cash centres the bank has outsourced the transporting of cash, while controlling the cash levels in branches manually. In case of a shortfall of cash in one branch, the bank is able to restock with cash from other branches within an hour.

An Australian bank stated on the other hand it regards cash handling as too crucial and prefers to do the forecasting in-house. The high priority also reflects that cash handling is overseen by a senior executive, the bank’s head of IT enterprise management, to make sure the bank has the right amount of cash in the right place at the right cost. The bank wants to control where the cash goes and for what reason. Analytics is largely automated and the bank states it runs very tight systems on how much cash is carried in every branch and every ATM at different times of the week, month and year. The bank closely monitors ATM usage in order to customise the amount of cash needed and thus fine tunes its forecasting capability. The bank also gets the outsourcing companies to do the right runs at the right time, while controlling the number and cash holding of cassettes.

Banks need to balance three factors to optimise forecasting:

- Manage the reorder levels for each and every ATM and branch
- Optimise the quantum of each reorder to avoid overstocking
- Balance this with the cost of transport

Cash demand forecasting models seek to balance the cost of transport, cash stocking and replenishment cost against

interest rates, while guaranteeing the availability of cash in the channel network. Parameters of forecasting models are determined during the system implementation stage and should be held constant during the operation phase. However as business environment changes continually the model parameters must be flexible enough to be adapted quickly if necessary. The development of an accurate forecasting capability is a process of trial and error, usually with a safety buffer of excess cash. The latter should also be incorporated into the calculation, weighting it against cost and reputational damage.

The management of reorder levels is calculated along criteria such as user patterns, seasonality, special recurring events, and non recurring events. Historical cash demand for every branch or ATM varies over time but usually follow weekly, monthly and annual cycles. Other effects such as non stationary behaviour of users and additional factors, such as paydays, holidays, and seasonal demand in a specific area affect cash demand too. For example, people tend to draw relatively large sums of cash at the beginning of each month. Before Christmas, Chinese New Year, and other holidays drawing rates rocket, whereas during other periods where people tend to take holidays, rates drop considerably. The location of ATMs is another key factor, while ATMs that are located in shopping centres, for example, are most frequented on Fridays and Saturdays, ATMs in the business district have low withdrawal volumes during the weekend.

Managing non-recurring events such as natural disasters provides the biggest challenge. Due to the earthquake and tsunami in Japan in March 2011 Japan’s third largest banks experienced a week-long ATM and internet banking outage, as well as problems settling payments that created a backlog of 890,000 unsettled payments worth \$10 billion. The bank was unable to meet the surge of demand for cash and money transfer orders by individuals and corporates who wanted to either withdraw cash for their immediate needs or send money to relatives or affected institutions in the disaster areas. In order to address the need for cash, the bank had to keep branches open over the weekend and a holiday, only allowing withdrawals of up to \$1,200. While such events cannot be forecasted, banks need to factor them into their cash planning and develop fast response mechanisms.

An Interview with Karsten Kemna, Regional Strategic Sales & Marketing Director Asia Pacific, Wincor Nixdorf



What do you see as the biggest challenges facing banks in the Asia Pacific region today as they seek to reduce their cash handling cost?

Cash is still the most popular payment medium in the world, being used for nine out of ten payments as per independent surveys available to Wincor

Nixdorf. The overall cost of handling of this cash is over \$300 billion, the majority of which is borne by banks and retailers. In Europe, for example, the annual costs of handling cash exceed \$70 billion per year. At the same time, the amount of notes in circulation also increases on a yearly basis, reaching up to 10% annual growth in countries such as China.

Wincor Nixdorf has responded to this need to handle enormous amounts of cash by introducing a portfolio of solutions to the Asia Pacific markets based on a new concept of automating manual cash handling processes whereby employees no longer need to come into physical contact with cash.

This solution is called Cash Cycle Management Solution (CCMS), and it does not only look at the cost side of the matter, but it is also able to provide optimal cash transparency, improved processes and maximum security which are also critical aspects of the cash handling of both banks and retailers.

CCMS does not only play a role in the banking arena, but equally as much in the retail space. Therefore, we are able to optimise the respective cash cycles not only in the banks and retailers, but also across the two industries, even including the CIT and Cash Centres in the process.

What global insights can you offer towards successfully integrating cash cycle management?

Wincor Nixdorf has introduced its CCMS concept together with the newest, best-in-class cash recycling technology to the global market. The key component of this technology (as well as the underlying software platform) is the standardised CINEO banknote storage sub-system that can be used not

only in different devices in the retail bank such as in the ATM, ATS or the CRS, but also in the equipment of retailers. This means that a CINEO cassette within CCMS can be taken from a retailer (after it is filled up) and directly brought back into the banking cycle without having to involve costly back-office processes with the CIT or even the cash centres of the central banks.

This new technology goes with the Cash Cycle Management Solutions Base, our full range of intelligent software that allows banks and retailers to manage and optimise the supply-chain of cash process across their branches and stores. This software includes cash inventory forecasts and optimisation, cash order management, track and trace and management reporting.

The CCMS solution has been successfully piloted in various customer environments across the globe to date. The key benefit that customers see is improved cost effectiveness, and also the ability to create an environment in which the end-to-end cash handling processes are made more secure and simplified.

Our research showed that many banks in Asia seem reluctant to give up control over their cash handling. What are the key arguments to ease these concerns?

In using a proven solution and by tapping on the huge experience of Wincor Nixdorf generated in different areas of cash handling over the last years, we provide not only the tools to manage cash, but also the consultancy skills to steer the bank in the right direction. The bank can then focus on its core activities which generate revenue streams instead routine processes that can be taken over by a trustworthy provider. Our solution also includes a ROI tool with client-specific KPIs put in place to monitor the performance of the solution over time.

With the introduction of any new technology there is always a period of education and understanding needed. CCMS is not about giving up control over cash. Its primary responsibility is to secure cash in a system that can easily be tracked and traced. In fact, CCMS will actually give banks more control and transparency over cash not less. Plus, since banks in

the region have not been able to access a complete cash handling solution from one vendor it is only natural that they may have felt more secure in handling it themselves. However, Wincor Nixdorf now has a proven solution to support banks with their respective cash handling needs, as well as the international consultancy skills to advise banks on the correct course of action.

Can you share first hand experiences on how the CCMS system is working in a real environment?

Both retail and retail banking customers of Wincor Nixdorf are excited to learn about the new CCMS concept, especially during the recent Wincor World 11 trade fair where the newest developments were shown to more than 7,500 customers worldwide.

To name a few examples, a major bank in Switzerland has started to create its own in-branch cycle by not only introducing the new technology platform across its self-service net-

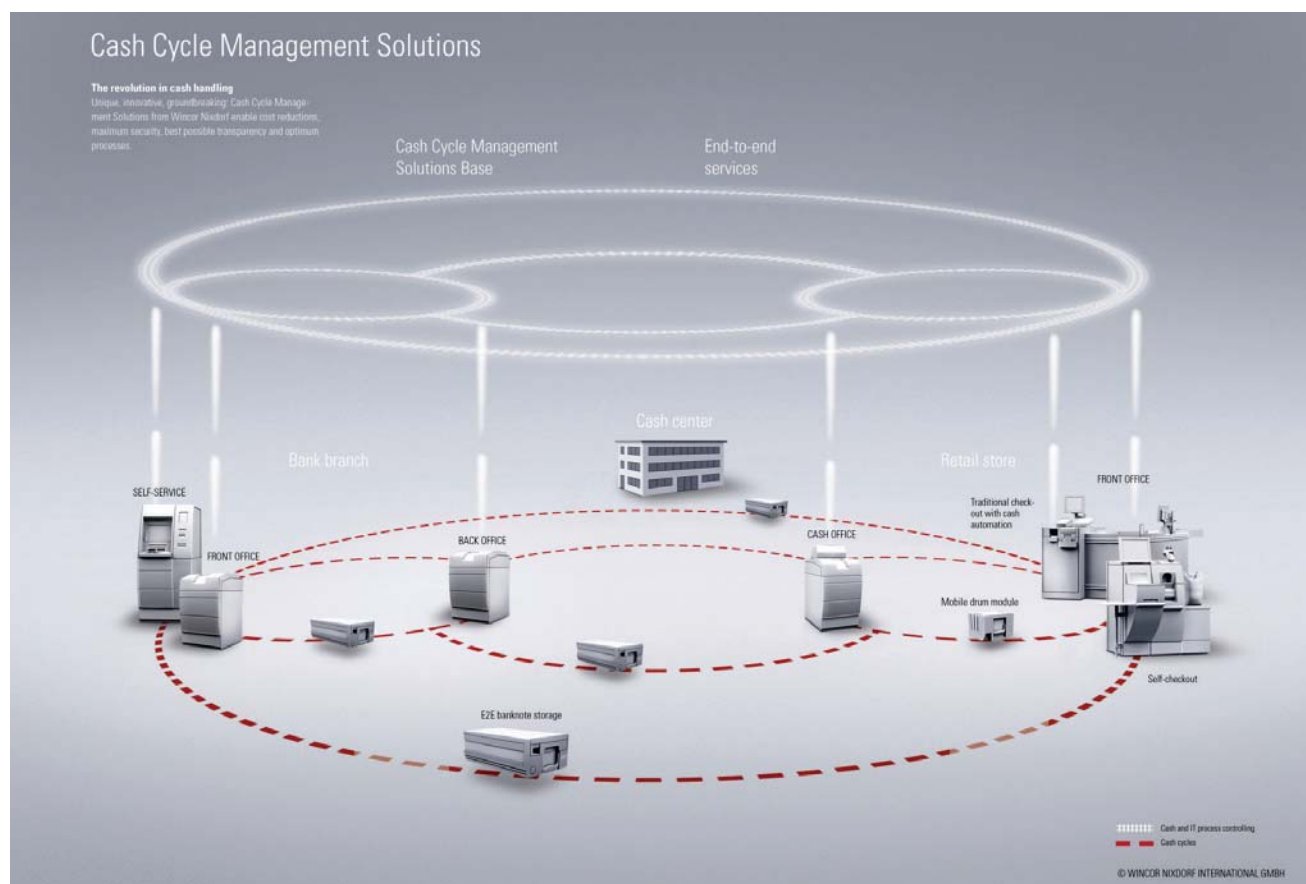
work, but also by connecting them to the CCMS solution. This allows them to swap cassettes and to significantly decrease costs in branches.

In the retail space, a major furniture chain in Germany has used CINEO to totally eliminate cash handling for its employees in the cycle, including the cashier position.

Last but not least, in a true cooperation between retail and banking, a gas station franchise has teamed up with a major private bank to improve the cash services both to the end customers, and to each other by optimising the cash flows and managing ownership of the cash changes.

The company is working to further expand the portfolio to provide integrated solutions for CIT companies as well as cash centres. For example, through close cooperation with Giesecke & Devrient, a connection between the intelligent cassette to the back-end sorting and counting machines is now also possible.

Figure 9 Wincor Nixdorf's new cash cycle management solution



THE ASIAN BANKER®

STRATEGIC BUSINESS INTELLIGENCE FOR THE FINANCIAL SERVICES COMMUNITY

Asian Banker Research
10, Hoe Chiang Road
#14-06 Singapore 089315

Thomas Zink
Ph: (+65) 6236 6535
Fax: (+65) 6236 6530
tzink@theasianbanker.com

The Asian Banker is a leading provider of strategic intelligence on the financial services industry, established since 1996. We are in the business of helping decision makers develop creative solutions around research and intelligence to achieve tangible business goals:

- We help organisations understand the markets they serve, through B2B surveys, field research, data and forward-looking research and intelligence.
- We help businesses benchmark their operations and competitiveness against industry best practices.
- We create communities for the industry to respond to global trends in the most creative way possible.
- We create programmes for organisations to communicate with their clients or their own employees.
- We help businesses position their investment story for investors.
- We track, rank and recognise achievements and leadership in the financial services industry for the benefit of users.

Visit www.theasianbanker.com for more information.

WINCOR NIXDORF

Wincor Nixdorf
2 Kallang Sector
Singapore 349277

Karsten Kemna
Ph: (+65) 6747 2623
Fax: (+65) 6236 2544
Karsten.Kemna@wincor-nixdorf.com

Wincor Nixdorf is one of the world's leading providers of innovative IT solutions to retail banks, retailers, healthcare, lottery and gaming, travel and leisure, food and beverage, and service stations.

The company's expertise lies not just in producing and supplying advanced IT systems, but in delivering complete solutions that encompass hardware, software, consulting services and maintenance of systems which are all geared to the optimization of customer processes.

Wincor Nixdorf has launched its innovative Cash Cycle Management Solutions, which is geared to improve cash handling both for retailers and banks in terms of security, transparency, process improvements and reduce costs.

One scenario integrates cash centres and bank branches/retail stores into the cash cycle. These considerations are based on the core assumption that automated cassette replenishment and emptying at cash centres represents a cross-sector cash cycle management process.

Please visit www.wincor-nixdorf.com for further information.

Learn More

As your financial institution pursues building high performance branches, the insights provided in this survey can help serve as a guide. We encourage you to contact The Asian Banker or Wincor Nixdorf to learn more about the solutions and resources available to assist you with your strategies.